II. REMARKS

Claims 1-34 were filed in United States Serial No. 10/049,876 on June 7, 2002. Claims 33 and 34 were previously canceled without prejudice or disclaimer, subject to Applicant's right to file the same in one or more continuing applications. Applicant respectfully requests reconsideration of claims 1-32, based on the following Remarks.

35 U.S.C. §112

In a previous response, Applicant amended claims 1 and 16 to recite "a gelled, edible starchy material." Claims 1-32 have been rejected under 35 U.S.C. §112, first paragraph. It is alleged that the application does not disclose a "gelled edible starchy material."

Applicant respectfully traverses this rejection. The application details the problems inherent in the preparation of a conventional roux. "The preparation of a roux requires a great deal of care, substantial ability and involves a laborious cooking procedure." Page 11, lines 3-4. The specification also states, "a roux is prepared by cooking a mixture of a starchy material, such as flour, and a fat, such as butter or vegetable oil. The flour and fat are combined in suitable proportions in amounts, and are heated for varying periods of time, depending on the ultimate consistency and color of the roux that is desired by the preparer." Page 2, lines 7-11. "Unless the butter and flour are stirred to distribute the heat to allow the starch granules to flow evenly, they will later fail to absorb the liquid." Page 2, lines 27-28. Additionally, "burning the flour will also shrink the starch, making it incapable of continuing to swell." Page 3, lines 1-2.

Applicant has developed a flavored solid-form food product to overcome the problems associated with the preparation of a conventional roux. The solid-form food product "can be used to avoid having to prepare a roux, gravy, or sauce at the time of food preparation and to avoid the inconsistencies inherent in a roux, gravy or sauce product." Page 11, lines 5-7.

The claimed invention does not need to be described literally or "in haec verba" in order for the specification to satisfy the written description requirement of 35 U.S.C. 112, first paragraph. Purdue Pharma L.P. v. Faulding, Inc., 230 F.3d 1320, 56 USPQ2d 1481 (Fed. Cir. 2000). Furthermore, "[T]he written description requirement does not require the application to describe exactly the subject matter claim, instead the description must clearly allow persons of ordinary skill in the art to recognize that he or she invention what is claimed. Union Oil Co of California Co. v. Atlantic Richfield Co., 208 F.3d 989, 54 USPQ 2d 1227 (Fed. Cir. 2000).

The present application indeed discloses that the solid-form food product contains a "gelled edible starchy material." Support for the "gelled edible starchy material" limitation can be found throughout the specification. For example, the specification expressly teaches that a mixture containing fat, starchy material, solidifying agent, flavoring agent and aqueous liquid is heated in a temperature range from about 140°F (60°C) to about 250°F(121°C). See Page 16, Lines 27-28 and Page 17, Lines 6-9 and Lines 14-18. Further support for a "gelled starchy material" can be found in Examples Nos. 1-5, 7 and 8 which discloses that the fat and starchy material components are combined at heated at 225°F (107°C), a temperature sufficient to melt the fat component and to cause the starch to gel.

It is well known in the culinary arts that when a fat and starch material are mixed together to form a roux, the fat and starchy material must be heated together at a high enough temperature to cause the fat component to melt and to cause the starch to begin to swell and ultimately "gel". Exhibits A and B attached hereto demonstrate that it is well known that starch begins to swell in response to heating at temperatures of 60°C and greater. "When liquid is added to flour, the starch granules inside the flour begin to swell when they reach 64°C." Exhibit A. "Starch begins to gelatinize between 60 and 70°C . . ." "Up to 60 to 70°C the swelling is reversible . . ." "With higher temperatures irreversible swelling called gelatinization begins." Exhibit B.

Because the starch is heated well in excess of 70°C (clear teaching of heating at a temperature between 220°F and 225°F (104°C-107°C)), for an extended period of time, it is clear that the starchy material swells and undergoes gelatinization to form a gelled starchy material. Once the molten mixture of ingredients cools, a solid-form food product including a gelled starchy material is provided. Therefore, Applicant respectfully requests withdrawal of this rejection.

35 U.S.C. §102

Claims 1-15 have been rejected under 35 U.S.C. §102(b) as being anticipated by WO 96/29894. It is specifically alleged that WO 96/29894 discloses a sauce base containing fat, starch, flavor, hydrocolloid, and water, ***"the starch being gelled during preparation by being heated to 70-100°C."***

Applicant respectfully traverses this rejection. WO 96/29894 is directed to a **sauce base**. Paragraph 7 of the Office Action alleges that Page 6 of WO96/29894 does not exclude gelatinization during the preparation of the food product. However, Applicant respectfully submits that this assertion is contrary to the express teachings of WO 96/29894. The following passages from WO 96/29894 demonstrate that **gelatizination does not occur during the preparation of the sauce base:**

- Page 6, lines 11-20 of WO 96/29894 expressly discloses that:

"[I]n the sauce composition, 1-20 wt% of a starch is present which preferably **has not considerably gelled. This means that the starch in the sauce base composition has not been heated to a temperature and for a time sufficient to gel . . ."** [Emphasis Added]

"However, if the sauce base product of the invention is subjected to light microscopy analysis, **starch particles are shown, which are known to be characteristic of a starch which has not gelled.**" [Emphasis added].

- Furthermore, Page 5, line 5-8, specifically teaches that:

"The sauce base comprises 40-70 wt% of a fat or fat blend, 2-8 wt% skim milk powder, 1-3.5 wt% of a whey protein, 5-12 wt% of a **starch or starch derivative which has not substantially gelled . . .**" [Emphasis added].

The express language in WO 96/29894 cannot be ignored. To the extent that any swelling of the starch occurs in the sauce base, it only occurs subsequent to the preparation of the sauce base, and during preparation of a flowable sauce from the sauce base. **The sauce base, as prepared, does not contain a gelled starchy material**. Accordingly, WO 96/29894 does not disclose that a flavored solid-form food product containing gelled starch. As the limitation of "[a] gelled, edible starchy material" is not disclosed by WO 96/29894, claim 1 is not anticipated by this reference. Claims 2-15 ultimately depend from claim 1 and therefore as a matter of law are also not anticipated by WO 96/29894. As WO 96/29894 is fundamentally different in that it discloses a sauce base food product where starch gelatinization does not occur during preparation of the sauce base, Applicant respectfully requests withdrawal of this rejection.

35 U.S.C §103

Claims 16-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over WO 96/29894 in view of U.S. Pat. No. 6,596,336. It is specifically alleged that WO 96/29894 discloses a food product containing fat, starch, flavor, hydrocolloid, and water. It is also alleged that WO 96/29894 discloses the addition of carbon dioxide to the food product. It is further alleged that U.S. Patent No. 6,596,336 discloses a seasoning mix containing sodium

bicarbonate. While the Office Action expressly concedes that WO 96/29894 does not disclose the addition of sodium bicarbonate to the sauce base, it is alleged that sodium bicarbonate is a source of carbon dioxide and that it would have been obvious to include the sodium bicarbonate disclosed in U.S. Patent No. 6,596,336 in the sauce base of WO 96/29894 as the source of carbon dioxide.

Applicant respectfully traverses this rejection. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Additionally, there must be a suggestion or motivation to combine the reference teachings.

First, the combination of the prior art references is improper because there is no suggestion or motivation to combine the reference teachings. An edible bicarbonate is included in the flavored, solid form food product disclosed in the present application to alter the pH of the food product. By contrast, page 9, lines 1-7 of WO 96/29894 discloses "[B]y addition of a gas such as air, carbon dioxide, or preferably nitrogen, by methods all well known in the art, the structure of the water containing sauce base can be altered. Without addition, a 15-25 wt % water containing product has a stiff pate-like morphology, whereas the addition of a gas provides a soft, spoonable, mousse-like structure."

Thus, WO 96/29894 is only concerns altering the morphology of the food product. The issue of acid reduction (pH adjustment) of the sauce base product is not contemplated or addressed in WO 96/29894. The gas (air, carbon dioxide, or nitrogen) is not added to the sauce base of WO 96/29894 to alter the pH of the sauce base. Rather, the gas is specifically added to the sauce base to alter the physical structure of the sauce base to render it scoopable or spoonable. Furthermore, Gimelli et al fails to discuss consistency of the sauce and fails to disclose the addition of sodium bicarbonate for that purpose.

While carbon dioxide may be derived from a reaction involving sodium bicarbonate, there is simply no disclosure, suggestion, or motivation to include an edible bicarbonate in the sauce base of WO 96/29894 for any purpose. It is entirely possible that one would simply blow carbon dioxide gas into a vessel containing the sauce base to achieve the desired morphology. Consequently, for the purposes of establishing a 103 rejection, the Examiner has arbitrarily selected one particular source of carbon dioxide (sodium bicarbonate) to the exclusion of all others. Applicant therefore respectfully submits that there is no motivation to combine these two references and requests withdrawal of this rejection.

Even if the rejection was proper, WO 96/29894 does not disclose a solid-form food product containing a gelled starch. The distinctions between the WO 96/29894 reference and the solid-form food product of the present invention, which are set forth above, apply equally to the rejection under §103(a). Applicant has distinguished the solid-form food product of the present invention from the sauce base of WO 96/29894, in connection with the rejection under 35 U.S.C. §102(b) above. Therefore, claim 16 is not obvious in light of these references, taken alone or in combination. Claims 17-32 ultimately depend from claim 16 and therefore are also nonobvious. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988). Applicant respectfully requests withdrawal of this rejection.

In view of the remarks set forth herein, Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. §§102, 103, and 112. Applicant also requests the issuance of a formal notice of allowance directed to claims 1-32.

Should the Examiner have any questions regarding the amendments and/or remarks presented in the present response, Applicant's undersigned attorney would welcome a telephone call.

Respectfully submitted,

Joseph G. Curatolo, Esq. (Reg. No. 28,837)
Salvatore A. Sidoti, Esq. (Reg. No. 43,921)
Curatolo Sidoti Co., LPA
24500 Center Ridge Road, Suite 280
Cleveland, Ohio 44145
Telephone: 440.808.0011
Facsimile: 440.808.0657
Attorneys for Applicant

Customer No. 23575

7-3-06

Date

EXHIBIT A

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Science of Cooking

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Celebrity Chef Secrets 2

Brian Turner - lumpless sauces

"Use boiling liquid and add slowly to the roux. Cook between each addition and stir in well. Whisk whenever possible and if in real trouble, pass through a sieve."

Science explains...

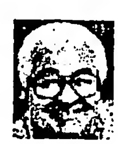
Roux is a type of batter, made from butter and flour, used to thicken sauces. When liquid is added to flour, the starch granules inside the flour begin to swell when they reach 64°C. Heating the mixture further makes them rupture. The flour starch is released into the liquid and starts to thicken it. This is known as 'gelatinisation'.

So when flour is mixed with hot liquid, the exterior portion of the starch granules become gelatinised and sticky. They then bind around the dry starch granules, forming pockets of dry flour trapped inside a sticky ball - or 'lumps'.

Adding liquid to the roux gradually whilst stirring, ensures that the starch granules heat up evenly, so they swell in unison. This results in a smooth, lumpless sauce.

Antonio Carluccio - making the perfect pasta

"Cook the pasta in plenty of boiling water. The pan must be large enough for the water to remain at a good rolling boil, so the pasta moves around as it cooks, preventing it from sticking together."



from - **Passion For Pasta**

Alcohol

Science Hot Top
Three-quarters o
overweight

Food: Recipes
Everything from
Cook quick fix to
Ramsay roast

Food: Back to b
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STARCH

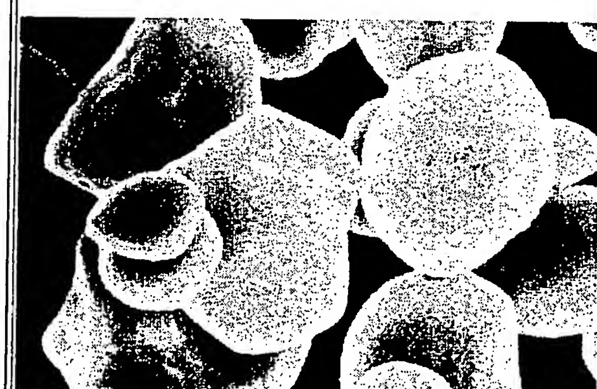
Gelatinization of Starch

to Top

Starch in its processed, commercial form is composed of starch grains or granules with most of the moisture removed. It is insoluble in water. When put in cold water, the grains may absorb a small amount of the liquid. Up to 60 to 70°ree;C the swelling is reversible, the degree of reversibility being dependent upon the particular starch. With higher temperatures in irreversible swelling called gelatinization begins.
Starch begins to gelatinize between 60 and 70C, the exact temperature dependent on the specific starch. For example, different starches exhibit different granular densities, which affect the ease with which these granules can absorb water. Since loss of birefringence occurs at the time of initial rapid gelatinization (swelling of the granule), loss of birefringence is a good indicator of the initial gelatinization temperature of a given starch. The largest granules, which are usually less compact, begin to swell first. Once optimum gelatinization of the grains has occurred, unnecessary agitation may fragment the swollen starch grains and cause thinning of the paste.
The gelatinization range refers to the temperature range over which all the granules are fully swollen. This range is different for different starches. However, one can often observe this gelatinization because it is usually evidence by increased translucency and increased viscosity. This is due to water being absorbed away from the liquid phase into the starch granule.

Gelatinization Changes in Starch

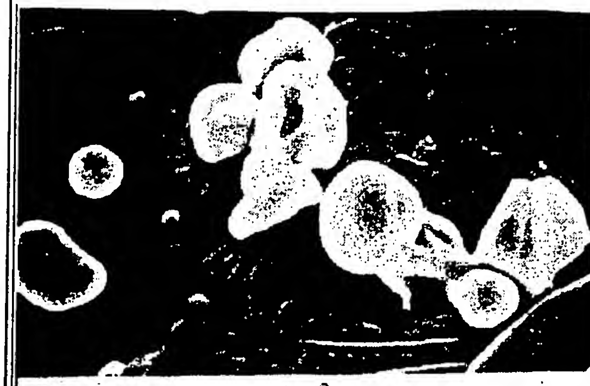
From the changes brought about by this process shown below, a starch paste may occur and/or a starch gel if conditions are correct. These changes are listed and may be seen by clicking on the heading of this paragraph.



Raw starch that has not had moisture added does not undergo gelatinization. By definition, gelatinization is a phenomena which takes place in the presence of heat and moisture. The dry raw starch, if heated, would undergo dextrinization. This certainly would affect the starch paste viscosity and starch gel strength. The paste viscosity would be decreased and gel strength decreased.
If a "limited amount" of moisture is added to the raw starch you may get partial gelatinization. This condition exists in baked products.

Cornstarch at a 5% level in 95% water would have a slight change occur if heat is initiated. Water might be slightly ADSORBED onto the surface of the granule. Actually, in the research from which these images came, I found that I got a difference in paste viscosity and

	ultimate optimum gelatinization temperature as measured by viscosity if I allowed cornstarch to sit in water at room temperature. This led me to believe that there is some initiation of adsorption upon the granule at room temperature (27C).
	If this 5% dispersion of cornstarch was heated to 40C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule might begin to be loosened slightly. In some types of starches water might even begin to be ABSORBED into the granule.
	If this 5% dispersion of cornstarch was heated to 50C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule would begin to be loosened.. This would allow the water to penetrate into the granule becoming ABSORBED by the granule. Additionally, some of the amylose may begin to work itself off the granule surface, thus, opening the structure even more.
	If this 5% dispersion of cornstarch was heated to 60-65C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule would loosen. This would allow the water to penetrate into the granule becoming ABSORBED by the granule. Additionally, some of the amylose would work itself off the granule surface, thus, opening the structure even more. This in turn would allow even more of the water to become ABSORBED and more amylose to work itself out into a colloidal dispersion outside of the granule. The long amylose polymer is a colloid in characteristics.
	This is intermediate between 60 and 70C. The precise changes are affected by rate of heating, condition of the starch and



5% CORNSTARCH, FRESH, 65°C (2000X)

other factors.

5% CORNSTARCH, FRESH, ...

If this 5% dispersion of cornstarch was heated to 70-90C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule would loosen. This would allow the water to penetrate into the granule becoming ABSORBED by the granule. Additionally, the amylose would work itself off the granule surface, thus, opening the structure even more. This in turn would allow even more of the water to become ABSORBED and more amylose to work itself out into a colloidal dispersion outside of the granule. The long amylose polymer is a colloid in characteristics.
At some point between 60-95C we would likely have gelatinization occur. This might be measured by loss of birefringence, increased viscosity, translucency, increased susceptibility to enzyme action, x-ray diffraction or some other chemical or physical means. At this point, the starch granule is swollen as much as possible. It is a starch sol until you remove it from the heat and begin to allow the amylose and some amylopectin to recrystallize, i.e. realign.

In some instances, when heated to 90C the starch granule could reach optimum gelatinization and be a nice swollen granule sack. In other cases, this may allow the sack to "implode" and loose their contents as there is not enough structure and hydrogen bonding to hold the polymers together. It is interesting that overcooking, as with overstirring, will decrease the starch paste colloidal sol viscosity.

Updated: Saturday, September 24, 2005.